

## CLAIMS

Having sufficiently described the invention, we claim:

1. Rotary reactor for nixtamalization, of the type formed by a central chamber and a series of jackets surrounding it, characterized by consisting of a longitudinal end at a given height, and another longitudinal opposite end at a lower height, wherein the longitudinal line of the reactor forms an angle which is selected between  $15^{\circ}$  and  $30^{\circ}$  in relation to the horizontal.
2. Rotary reactor for nixtamalization as claimed in the preceding claim, characterized by consisting of inside the central chamber, affixed to the internal face, a series of draggers that consist of parallel bands, placed tangentially to the interior face of the central chamber of the reactor.
3. Rotary reactor for nixtamalization as claimed in the preceding claim, characterized by the band forming an angle in relation to the internal face of the central chamber, which is selected from between  $80$  and  $100^{\circ}$ .
4. Rotary reactor for nixtamalization as claimed in the preceding claim, characterized by the band forming an angle in relation to the internal face of the central chamber, which is equal to  $90^{\circ}$ .
5. Rotary reactor for nixtamalization as claimed in the any of the claims 2 to 4, characterized by la band having height selected between the interval formed between  $20$  and  $30$  cm.
6. Rotary reactor for nixtamalization as claimed in the preceding claim, characterized by the band having a height of  $25$  cm.

7. Rotary reactor for nixtamalization as claimed in any of the preceding claims, characterized by the reactor consisting of a means of control for the exit of nixtamalized material, which consists of an opening in the longitudinal end of the reactor which is at the lower height in relation to the height of the opposite end, a panel of larger perimeter than the opening, but with a geometric configuration which may occlude said opening, and some affixing means for this reactor panel, corresponding to the position of the opening, said affixing means having the ability to control the degree of separation between the panel and the reactor in order to allow the exiting of more or less nixtamalized material.

8. Rotary reactor for nixtamalization as claimed in the preceding claim, characterized by said affixing means being formed by a pair of threaded dowels located on the opposite ends of the panel and some bodies with internal threads for screwing said dowels, displacing said panel towards the reactor or separating it from the reactor.

9. Rotary reactor for nixtamalization as claimed in claims 1 through 8, characterized by said affixing means being formed by a pair of threaded dowels placed on opposite ends and some bodies with internal threads for screwing said dowels, displacing said panel towards the reactor or separating it from the reactor.

10. Rotary reactor for nixtamalization, the reactor characterized by on the internal face of the wall which divides the central chamber from the intermediate chamber, dragging bands are placed, in number between 1 and 12, with a height of band between 1 and 40 cm.

11. Rotary reactor for nixtamalization as described in the preceding claim, characterized by said bands presenting la configuration of a gull wing.

12. Rotary reactor for nixtamalization as described in claim 10 or 11, characterized by having just one jacket wherein working fluid is fed for heating the nixtamalization chamber; the working fluid is chosen between vapor, burnt gases and thermal oil and the source of heat is chosen between the burning of a fuel and the passage of electric energy through resistances.

13. Rotary reactor for nixtamalization as described in the preceding claim, characterized by the working fluid being burnt gas.

14. Rotary reactor for nixtamalization as described in any of the claims 10 through 13, characterized by consisting of an external volute formed by a band which is united by means of a helicoidal cant to the external surface of the nixtamalization chamber, in order to allow a longer flow of the working fluid thus obtaining better thermal exchange.

15. Rotary reactor for nixtamalization as described in the preceding claim, characterized by besides a front volute, there is a second intermediate volute with the same development as the first; said second volute is formed in order to allow the passage of a second working fluid, at a low temperature in relation to the first working fluid.

16. Rotary reactor for nixtamalization as described in the preceding claim, characterized by also said second volute being formed by a half round which is attached to the intermediate space of the first volute and follows the same rotation.

17. Rotary reactor for nixtamalization as described in claim 10, characterized by consisting of two jackets communicated by means of a series of windows made in the common wall of said jackets.